

ART. XXIX.—*On a New Species of Earthworm from Norfolk Island.*

By W. BLAXLAND BENHAM, Professor of Biology, University of Otago.

[Read before the Otago Institute, 14th October, 1902.]

Plates XXII.—XXVI.

OWING to the kindness of Professor Dendy I have been enabled to examine a small collection of earthworms made by Mr. Laing on Norfolk Island. The specimens were in two lots. One lot turns out to consist of introduced European worms—*Allolobophora caliginosa*—a species which seems especially hardy and capable of adapting itself to a great variety of conditions, as it is now extremely widely spread, being met with wherever commercial intercourse with Europe has been established. The second lot consists of a few fragments (but, fortunately, two of these were the anterior moieties) of a worm which belongs to the genus *Megascolex*, the headquarters of which is Australia, though several species occur in Ceylon, and a few elsewhere in the Oriental region. The species does not agree with any hitherto described worms, and I suggest the specific name "*laingii*" for it. Owing to the poorness of preservation several points were not fully followed up, so that certain gaps in our knowledge of its anatomy remain.

***Megascolex laingii*, n. sp.**

Colour, in alcohol, purplish-red, with a darker line round the middle of each segment; pale below.

Length of longest fragment 20 mm., by 2 mm. in diameter, containing 28 segments.

Prostomium broad, its base extending nearly across the peristomium; its length short; imbedded about one-third into peristomium. No posterior groove—*i.e.*, "epilobic."

Chætæ, in mid-body, about 32—*i.e.*, 16 on each side—with a distinct dorsal and ventral gap, the latter rather the greater. The number gets smaller anteriorly, as does the ventral gap, thus: Total number on 6th segment, 24; 3rd segment, 20; 2nd segment, 16. The more dorsal chætæ of each ring are further apart than the more ventral ones.

The *clitellum* is most unfortunately not yet developed.

The *male pores* are on small rounded papillæ on the 18th segment, in line with chætæ *b* (*i.e.*, the second from below); each papilla is continuous on its external margin, with a short longitudinal ridge extending across the 18th segment. On the 17th segment is a pair of transverse ridges, or oval papillæ,

meeting in the median ventral line so as to form a dumb-bell-shaped accessory copulatory structure.

The *spermathecal pores* are between segments 7/8 and 8/9, close to the ventral line, in line with chætal gap *b/c*. On segments 10, 11, and 12, in line with these pores, is a series of pale areas, each with a slight pitting in its centre, indicating copulatory tubercles.

I did not find the *oviducal pores*.

Dorsal pores commence behind segment 5.

Internal Anatomy.

The dorsal vessel is single. The last heart is in segment 12. I did not note the total number of hearts.

The gizzard is small, thin-walled, cylindrical, and occupies segment 5.

The œsophagus is slightly dilated in segments 13 and 14, though no definite gland is formed.

The intestine commences in the 16th segment.

The worm is micronephric, and anteriorly is a large glandular body, which is probably a pepto-nephridium.

The Reproductive System.—The testes, ovaries, funnels, and ducts are in the usual positions.

Two pairs of botryoidal sperm-sacs lie in segments 9 and 12, while the intervening segments were occupied by loose sperms.

The prostates, or spermiducal glands, are small, limited to the 18th segment. Each is flattened, lobulated, with a short muscular duct, near the origin of which there is a distinct separate lobule of glandular substance, so that the gland is unequally bilobed.

I observed no penial chætæ.

The spermathecæ are two pairs, in the 8th and 9th segments respectively. Each consists of a globular copulatory sac, with a single elongated diverticulum opening by its own duct into the short duct of the copulatory sac.

Remarks.

In some respects this worm agrees with *M. minor*, Spencer,* from Queensland—*e.g.*, in its small size, number of chætæ, position of dorsal pore, absence of œsophageal glands, and number of spermathecæ and of anterior copulatory glands. On the other hand, Spencer describes vascular swellings of the œsophagus in segments 8, 9, and 10, and a bilobed, equilobed, spermiducal gland. He makes no reference to copulatory glands on the 17th segment, which are so conspicuous in the present species.

For explanation of figures, see pp. 289, 290.

* Baldwin Spencer, "Further Descriptions of Australian Earth-worms" (Proc. Roy. Soc. Victoria, 1900, xiii. (n.s.), p. 49).